

**SEGA® SC-3000 COMPUTER REVIEWED**

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We would be happy to receive any kind of information on computers. Intended articles should not be more than 1000 words long.

Programs should, whenever possible, be computer printed.

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- 16K Byte RAM.
- Wide Range of Semi-Graphic Characters.
- Easy Panasonic BASIC Language.
- 32 User-Definition Characters.

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System: Software scanning  
Keys: 5-shift key mode with 45 keys, SHIFT key and CTRL key
- Display interface  
Screen size: 24 lines x 32 characters

- Characters: 64 characters with 6x7 dot matrix  
64 semi-graphic characters with 8x8 dot matrix  
Characters & symbols specified by user: 32 characters with 8x8 dot matrix
- Attribute: Inverted display function  
Composite video signal: with 75 ohms, 1V p-p or with RF flip-flop converter
- Cassette Interface  
System: FSK system 1,200Hz (space), 2,400Hz (mark)  
Baud rate: 600 Bauds
- AC Adaptor  
Input Voltage: AC 110V, 120V or 220V ± 10%, 50/60Hz  
Output Voltage: DC 17V, 7.8V and -8V  
Power Consumption: 12.5W
- RF Modulator (JR-R05U)

Panasonic

Personal Computer

**JR.100**



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## EDITOR'S PAGE

First of all, a thank you to all the readers of "Computer Input" who have sent us material so far. We were overwhelmed by the tremendous support you have shown us.

With the printing date of this, the second issue, looming up on the horizon, we had not expected to receive material to be included in time. However, due to your support, we have been able to do just that. But don't sit back now, keep it coming in. As we have said "Computer Input" is your magazine, which means it should have what you want in it. The more the merrier — the more letters, programs & technical information we receive, the more we can print, and the more each individual will get out of it. We will be happy to receive anything you send us, from a ten-line program to a two page article. Anything. If it interests you, then other readers will be interested.

As for the subscriptions, we will soon be waiting eagerly in the post office for the lucky 100th, who will win the Sega SC-3000 computer (see Hardware Review — Software Review). But all you other readers — subscribers or future subscribers — don't despair. We will now run a competition for new subscribers (see Competition Page) and in the near future we will run competitions & specials, etc. for our existing subscribers. (By the way it's amazing how many of my 'acquaintances' have asked me to tell them when we receive the 90th or so sub — cheeky devils — they should know the winner's name will be Noble!!).

You will notice that we haven't got a Club Page in this issue, as we had hoped. We had a few letters from clubs asking for more information. Come on all you clubs out there — it's not often a magazine gives you free reign (almost) of a whole page. As we said, you can put anything that's printable on the Club Page — your calendar for the next year; news; programs; articles; technical information; a photograph of your President; whatever you feel you would like everybody else in NZ to know. Contact us (preferably by phone) and we will be more than happy to reserve an issue for your Club.

If you buy anything that's got anything to do with computers (especially home or micro) then drop us a line and tell us what you think of it.

Enough of the chit-chat. Now the apologies.

We received a number of letters about the first issue (keep them coming). Unfortunately, a few things were beyond our control (I hope most were put right in this issue). The "Software Input File" for instance turned out to be a mess!!

The type was far too small and it would have been nice to know which machine each programme would run on. But I suppose you can't have everything. This is one of the most important sections in "Computer Input" and has now (in this issue, hopefully) been put right.

"Software Input" is your section. We want to have pages and pages of programs — it's no good having a computer magazine without programs.

The programs are the best bits!!

ED.

## READERS' LETTERS

Dear Sir,

It is good to see the introduction of another NZ computer magazine, especially one oriented toward the home/hobby/education sector. As a long-time computer hobbyist (I bought my first computer in July 1979) I welcome a vehicle for opinions and news of the NZ micro scene. I hope that you will cover a wide variety of machines (I currently own an Apple II and a Compucolor, and will be buying a Commodore '64 in a week or so).

When printing program listings, please state the machine it was written for and any extra memory/language/peripheral requirements. In your October issue at least half of the programs did not specifically name the micro, although experienced users may recognize basic commands or peek/poke locations. Also a larger typeface might make the programs actually legible (I defy anyone to read the PET-VIC poke chart on Page 18).

I like the idea of mail order software, how about extending it to blank floppy disks and computer cassettes (high quality of course). We pay a ridiculous price for them in Hawke's Bay.

Ross D.  
HAWKE'S BAY

Dear Sir,

Thank you for producing a computer magazine that also caters for relative newcomers.

As a novice in the field of computers and their associated jargon, I found the introduction and "Eric's Input" most welcome. Thanks to you, I am now beginning to understand what all these bits, bytes, ram's & rom's are all about.

I also enjoyed reading your "Input Software Review" — It's good to get comparisons, not only for game skill, but also for picture, sound and overall quality.

I have only one criticism — and that's the type size of your programs in "Software Input". My eyesight is pretty good, but I had trouble seeing that type set.

But, overall, I found the magazine very pleasing. It's good to finally see a magazine aimed at home computers in NZ written in everyday language.

R. Watson  
GLEN EDEN, AUCKLAND

Dear Sir/Madam,

I am very impressed by your magazine "Computer Input". I trust it will be as successful as it deserves to be. I have one suggestion for your magazine. I think that along with the title of

the programs, in the Software Input section, the name of the machine could be included. Most of the programs included did have this, but it is difficult to discover the others.

I wish you luck.

D.J. Pitcaithly  
CHRISTCHURCH

Dear Sirs,

In the introduction page, you asked for comment. Well, here's one. Can you increase slightly the size of the print in the programs.

Very hard to read. Don't like to moan.

Makings of an excellent mag.

Cheers Paul Evans  
GRAFTON, AUCKLAND

Thank you for your letters.

We have to make the type so small to hide the mistakes!

Fortunately for all you readers who can't see an ant scratch itself from a hundred paces, we have rectified (we hope) that "slight" problem of not being able to see the listings and not knowing what machine they're for anyway (a slight misunderstanding with the printer). You should be able to see things boldly & clearly from now on (fingers crossed).

ED.

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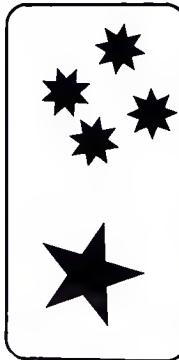


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## SEGA<sup>®</sup> SC-3000



— from GRANDSTAND  
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The newest 'Computer' to appear on the home market is the SEGA SC-3000. It comes with an extremely comprehensive operating manual which takes you, step by step, through every procedure necessary to have your personal computer operating as soon as you can unpack it and plug it in.

The heart of the SEGA SC-3000 is the Z-80 microprocessor. It has a large 32K ROM memory and an outstanding use of the basic language. The RAM memory included in the computer is 18K. It has 16K of video RAM — which is one of the reasons for the superlative graphic capability. Plug-in memory expansion cartridges are also available in additional 16K RAM and 32K RAM. These cartridges also include the BASIC programming system.

### SEGA KEYBOARD

The Sega keyboard has been carefully designed to make operation of the computer as simple as it can possibly be.

The keys have a unique rubberised surface and function at the merest touch — in standard typewriter layout. A full width Space-Bar is provided as well as two, double width Shift keys.

All alphanumeric and symbol keys are colour coded dark grey; the function and control keys are light grey with yellow symbols.

When any key is depressed a short 'beep' sound is heard — indicating one key stroke. If a key is held down, it automatically repeats, with a beep

indicating each key entry. If you wish to operate your Segain a silent mode, you can either control it from the keyboard or by programme instructions, or simply turn down the volume level on your television set.

In addition to typing a single letter, number, character or symbol, each key on the keyboard also provides other functions. One of the most significant aspects of this ability is that the most frequently used BASIC commands, key-words and functions can be produced with a single touch of a key — when also holding down the control or function key. This means there is no need to type the complete instruction such as PRINT, GOTO, LIST and so on.

With your SC3000 just one key touch does it all!

Similarly, all graphic characters can be entered by a single keystroke. You can also set the keyboard to give you capital letters, small letters or graphic mode.

The Sega SC3000 offers you a total of 200 characters. These comprise 93 English letters, numbers and symbols; 53 graphic characters — and a 'bonus' alphabet of 54 Japanese symbols.

Each character is formed with a 5 x 7 matrix of dots (or pixels) and it is also possible to create your own characters, symbols and pictures.

### Graphics

Only one word comes anywhere near describing the graphic capabilities of the Sega SC3000. And that is, brilliant.

The screen display is 38 character

columns by 24 lines. In the graphic mode, an extremely high resolution image of 256 x 192 dot matrix is achieved.

Unlike most other home computers, you can also mix text and high resolution graphics on the screen at the same time.

The things you can do with graphics are as unlimited as your imagination. You can use the video display screen as a 'canvas' for your artistic and imaginative ideas. Illustrations, patterns, blocks of colours, charts, graphs and many more creative applications are at your fingertips.

An incredible feature of the Sega — usually only available on much more expensive computers — is its ability to provide 32 planes of GRAPHIC SPRITES. A sprite is any shape, or symbol, or graphic, which you create that can be made to move around the screen at your COMMAND; in any colour. Think of each plane as plastic transparencies, and imagine images able to pass behind and in front of each other. All 32 at once if you wish! The sprites — each on its different plane — produce a very real three dimensional effect and the creative applications of this very special Sega feature have no limit at all. You can make airplanes move in front of and behind clouds ... ships pass each other ... people appear to enter buildings and disappear inside. Together with the built-in graphic commands in the BASIC programming language, you have an exciting educational tool at your fingertips.

Another unique feature, is Sega's ability to act on your single commands of LINE, CIRCLE and PAINT. This enables your graphics to be displayed instantly in any combinations of 16 colours. The function of PSET allows you to manipulate individual dots within the 256 x 192 screen matrix.

## Sound and Music

You can compose and play back music on your Sega and it will do so from the most simple to extremely complex. By using the MUSIC cartridge you can compose and play tunes with up to three parts, over a range of five octaves, at any tempo or rhythm you decide.

## Editing/Programming

Full, on-screen editing makes programming extremely simple on your SC3000. To correct a mistake, or make a change, you simply list the line or number of lines you wish to alter — and use the four direction keys at the right of the keyboard to move the cursor to the character to be changed.

## Talking Sega's Language

Sega SC3000 understands two levels of command; BASIC II and BASIC III. Both of these languages have a complete set of commands, statements and functions. As we mentioned before, many of these functions can be made to happen at the single touch of a key-stroke.

Numerical values can be stored and displayed to 11 digits of accuracy. All the standard calculations are possible; arithmetic, relational, logical and string concatenational.

Amongst Sega SC3000's capacity to obey 44 commands and 37 functions, are those of RENUM (automatic renumbering of programme statements), COLOUR (keyboard selection of 16 colours), HCOPY (allowing total screen text to be printed with one statement), CALL (for access to subroutines), PATTERN (for the creation of your own characters), LINE and CIRCLE (for



Sega SC-3000, with 4-colour printer.

the creation of geometrical shapes) and PAINT (easy use of the available 16 colours).

## Adding to your SC3000

Your Sega SC-3000 has in-built interface connections for the attachment of a standard cassette recorder, printer, and two joysticks for game usage. (Games can also be played from the keyboard, without joysticks). An expansion unit is available for easy attachment of floppy disk and modern communication. The Sega 4-colour, 40 column printer is also available at around \$400.

## Software

Software cartridges include BASIC II, BASIC III, MUSIC and GRAPHICS. As well as many unique GAMES cartridges.

The MUSIC cartridge is an enjoyable and successful teaching aid and also prints the clefs, staves and notes on the screen as keys are depressed on the keyboard.

The GRAPHICS cartridge allows extremely easy use of the Sega's powerful graphic capacity, in particular, the SPRITE feature for the drawing, display and movement of

your own developed images.

The GAMES cartridges really do make anything else currently available look pale by comparison. There is both a technical and innovative reason for this.

Most other games use from 2K to 5K ROM. The minimum ROM used in Sega game cartridges is 16K; many use 32K. The effect of this additional power is to give every Sega game the quality of those provided for arcade use. The SC3000's 16K in-built video RAM and its 32 sprites are other reasons why no other currently available games can come anywhere near Sega's performance in graphics, sound and colour.

Built into every Sega game cartridge is a multi game facility. When you reach higher levels of aptitude, the games take on new dimensions with new images appearing on the screen.

In addition to the wide selection of Sega games available now, others are being added to the range at the rate of at least one per month.

All this for around about \$400. The Sega SC-3000 should be available in most shops this month country wide. Don't take our word for it, check it out for yourself.





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# HARDWARE REVIEW

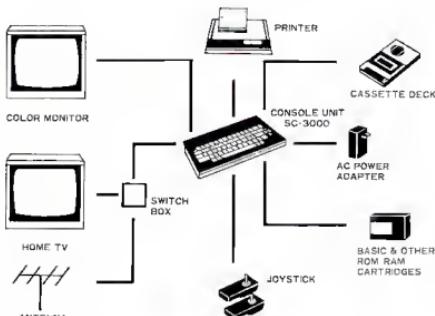
## **SEGA® SC-3000 EXPANSION CAPABILITIES**

The SC-3000 can be expanded in many different ways for a wide variety of uses.

Immediately available expansion modules include the joystick assembly; a 32K RAM Memory Expansion Module (bringing the total RAM memory to 48K RAM); and the new SEGA four-color, 40-digit printer. Later this year, SEGA will also introduce its own floppy disk module. Truly SEGA's SC-3000 ushers in a new era in low-cost personal computing.

## SPECIFICATIONS:

CPU:	B-Bit Microprocessor Z-80A
RAM:	2K Bytes of system RAM, 16K~32K Bytes of ROM/RAM cartridge pack.
VIDEO RAM:	16K Bytes of Video Display RAM.
ROM:	8K~48K Bytes of cartridge ROM.
GRAPHICS:	256 x 192 dot matrix.
TEXT:	38 character columns by 24 Lines, 5 x 7 character dot matrix. Alphanumeric and kana.
COLOR:	16 colors, including black and transparent.
SPRITES:	32 sprites (in graphics mode only).



**MUSIC:** Triad chords, over a 4 octave range.  
**DISPLAY:** Home TV Unit: NTSC system  
Color Monitor: Composite system  
**LANGUAGE:** BASIC Level II & BASIC Level III  
**POWER:** 100V AC 50 Hz/60 Hz, 7.7 Watts.  
**JOYSTICK:** Two remote joysticks can be connected to  
**CONSOLE UNIT.** (Optional item)  
**DIMENSIONS:** W 353 x D 210 x H 46 (in MM)  
**COLORS:** Black, Wine Red, or Ivory

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## Commodore 64 — Home or Business Computing

For the first time in New Zealand we have a computer that can be truly used as both a home and business computer.

Picture if you can the kids playing 'Space Invaders' in the evening at home and the next morning dad is off to work with the Commodore 64 under his arm to complete his daily business transactions. This has now become a reality, and, at the completion of this article, I will list some of the business software that was made available for us to review and also offer in the mail order section for sale around the country.

The small businessman will be able to combine a Commodore 64 computer with a 1541 disk unit and a 1526 matrix printer for less than \$3000 and with the right software, handle everything from debtors ledger to word processing. The C-64 features a keyboard with the standard typewriter layout with both upper and lower case, so someone without typing experience will have no trouble using it. So read the following manufacturer's notes and draw your own conclusions.

### GENERAL LEDGER

This General Ledger program runs on a CBM 64, 1541 single disk drive and 80 column printer (CBM 1515, 1525, 1526).

This system caters for a maximum of 299 general ledger accounts and up to 3000 individual transactions. Budgets are retained for 12 months along with monthly figures from last year's trading for comparison. You can highlight accounts that vary by more than a predetermined percentage to another budget or last year's budget. This program will also enable you to:

- Service Accounts — load profit and loss appropriation accounts. Load, change, delete and print accounts.
- Ledger Report — print out of accounts and their balances.
- Monthly Update — close of the month's transactions.
- Yearly Update — close of the financial year's transactions. Post to accounts.

### VIZAWRITE 64 WORD PROCESSOR

A completely new product making its debut on the Commodore 64 computer, and shortly to be available for all new Commodore computers. VIZAWRITE 64 is the ideal entry point for users who require the power and style of a dedicated word processor, but at a reasonable cost.

If you have never used a word processor before, you will find VIZAWRITE 64 an unusually easy program to learn and use, and if you already use a dedicated word processor in your place of work then you may be pleased to know that VIZAWRITE 64 operates in an almost identical manner.

It's quite likely that this is your first introduction to word processing and you may well be wondering what a 'word processor' really does, you know it can be used to produce a letter or help you write a document, but it sounds far more mysterious than just that!!

The next few paragraphs explain the sort of uses that a word processor can be put to and how the program assists you to 'process your words'.

In its simplest form, a word processing program allows you to type words and figures onto the screen and then print them onto paper using a printer. It simulates a typewriter, with the advantage that if you are typing onto the screen you can correct mistakes or change words considerably easier than if typing straight onto paper with a typewriter.

A word processing program will always provide that basic facility, all the other facilities that are provided just build on the ability to print words that have been typed onto the screen.

Centering Text In The Middle Of The Page.

Altering Text That Has Already Been Typed.

plus other facilities such as:

Copying Text From One Part Of The Document To Another.

Saving The Document To Disk.

These and many other facilities exist to help you create a complete letter or a major document.

They can be used when you need them — some facilities you may never use, others you'll use over and over again.

For example, once you have typed a letter, you'll probably read it back and decide to alter it, it's the facilities provided which will ease that task, with VIZAWRITE 64 you can simply 'type over' a correction or 'insert' a piece of text that you forgot to enter, you can move a word from one place to another or simply delete it.

In a document such as a report you'll need to be able to line-up columns of figures, centre a heading or lay out a paragraph inset from the left margin, a word processor assists in all these areas, so it becomes easier and faster to produce high quality documents. You may even attempt something you wouldn't dream of with a typewriter.

And when you come to change it, you need not re-type the entire document.

Once you have typed in your letter or other text the word processor can then be instructed to store it permanently on a diskette, this is one of the most useful features of a word processor because hours days or weeks or later you can simply recall your letter from the diskette back onto the screen and review it or print it again.

So you can see that a word processor is really a collection of facilities that allow you to type, format, store and print your documents. Not really mysterious after all!!

### CREDITORS SYSTEM (WITH COST ANALYSIS)

Menu: The Menu will automatically be loaded on system start-up, and is for the selection of the job (program) that the user wishes to run.

All job names are displayed on the screen, preceded by a job number. A job is selected by keying in the appropriate number followed by (return).

Please note that the full number must be entered e.g. "04" not "4".

If a mistake is made, press (INST/DEL) to re-select.

All programs will return to the menu when completed.

**"THE COMMODORE 64  
COULD BE THE  
MICROCOMPUTER  
INDUSTRY'S OUTSTANDING  
NEW PRODUCT  
INTRODUCTION SINCE THE  
BIRTH OF THIS INDUSTRY."**

-SHEARSON/AMERICAN EXPRESS



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# BUSINESS INPUT

Menu options are:

- 00) Exit System
- 01) Copy Diskettes
- 02) Service Creditors
- 03) Load Balances
- 04) Sort Creditors Files
- 05) Creditors Update
- 06) Creditors Reports
- 07) Available Numbers
- 08) Invoicing
- 09) Cash & Journal Posting
- 10) Cost Analysis Report
- 11) Service Cost Analysis

An additional program (Job No. 12) is available but not displayed on the menu.

This program is called initialize, and is required to format disks to the Commodore.

## DEBTORS SYSTEM (WITH COST ANALYSIS)

Menu options are:

- 00) Exit System
- 01) Copy Diskettes
- 02) Service Creditors
- 03) Load Balances
- 04) Sort Debtors Files
- 05) Debtors Update
- 06) Debtors Reports
- 07) Available Numbers
- 08) Invoicing
- 09) Cash & Journal Posting
- 10) Cost Analysis Report
- 11) Service Sales Analysis

An additional program (Job No. 12) is available but not displayed on the menu.

This program is called initialize, and is required to format disks to the Commodore.

## BUSIWRITER

A powerful but inexpensive general purpose Text Editor and Word Processor.

It can be used to read, write and create sequential text files for any purpose.

It can be used to read, write and create sequential text files for any purpose:

- Writing letters
- Creating data files
- Writing assembly programs as text, and
- any other application where text manipulation is needed.

Any existing sequential files can be read from disk or cassette by the Editor. They can then be reviewed, altered or printed.

The Editor allows the user to record or retrieve text using the CBM ASCII or standard ASCII character

sets, thus eliminating conversion problems if peripherals cannot handle CBM ASCII.

The Editor's text buffer will automatically set itself to the maximum size allowed by the memory of the computer (the text buffer is the area in memory where the Editor stores the text currently being edited). The number of characters (bytes) of free space is always shown on the top line of the screen. The text buffer has a capacity of over 29K bytes.

There are at least two general classes of word processor. One type is page-based, and presents a formatted display of the text as it will be printed. Text is usually viewed and edited on a page-by-page basis, and deletion, insertion and file handling often require entry into the appropriate "mode". The text capacity is sometimes quite low, and the reaction time of the Editor may be so slow that a good typist will outpace it, thereby losing some text.

This is nevertheless the most common type of word processor for traditional reasons; before the advent of personal computers, terminal based systems worked best with this type of editor.

BUSIWRITER, on the other hand, is designed for easy use and tailored for personal computers. The screen is like a window onto the text buffer which can be moved up or down to allow any part of the text to be viewed and edited. Unformatted text is entered at the keyboard, and allowed to wrap around the screen continuously as far as desired. The user need only enter a RETURN where each printed paragraph is to end.

Formatting is done automatically on printout as specified by the user. Line length, margin width, size of indent, optional right justification and other parameters can be specified, and may be changed anywhere in the text.

There are no distinct "modes" of operation, so all editing functions can be called at all times with one or two keystrokes. The Editor has as large a text buffer as the computer's memory will allow, and its reaction time is so fast that it is impossible to type ahead of it.

In addition to this, the Editor can be used like a page oriented Word Processor if the user so desires. The user can type in individual lines each ending with a RETURN and each shorter than the desired printout width, rather than entering paragraphs many lines long. Each of these lines can be formatted manually, and

the printout will duplicate exactly what is on the screen.

## BUSIMAILER 64

A simple but effective mailing list designed to run on a CBM 64, 1541 single disk drive and a 1500 series CBM printer.

Used in conjunction with Printlink 64, it will allow you to use any centronics parallel printer such as the EPSON series of printers. The mailing list will cater for 1500 records consisting of a name, an address, suburb, post code, state and a two alphanumeric digit category code.

A powerful sort is included allowing you to sort and extract records on any of the above fields and use the records as a mailing list; or generate a disk file with names and addresses of selected records to be subsequently used with Busewriter for mail shots; and/or a label printing run using standard two-up labels.

## BUSICALC

Are you doing the same series of calculations time and time again, with a different set of figures each time? Whether balancing your household budget, preparing a cashflow forecast for your company, or redoing the Year End Accounts for the umpteenth time you can make easier with the aid of your personal computer.

How would you set about one of these jobs using pencil and paper? You would set everything out in rows and columns, with months across the top and income and expenditure down the side. BUSICALC works in just the same way. When you start out, the sheet has numbers and letters so each box can easily be identified, but you can put headings in if you want.

Wherever a figure needs calculating you tell BUSICALC how to do it. First time around may not save any time, but subsequently BUSICALC will work out the answer. Just think how often changing one figure can alter most of the rest — with BUSICALC that is just not a problem.

## THE PERSONAL FINANCE ASSISTANT

Now you can have a sophisticated but easy to use record of your finances. The Personal Finance Assistant allows you to keep track of your deposits and withdrawals; savings, credit card and cheque accounts, etc.

The Personal Finance Assistant

## BUSINESS INPUT

allows for 26 different departments such as food, clothing, rent, car, mortgage, etc. You can search for and edit transactions and print out reports or balance sheets.

### THE FILING ASSISTANT

The Filing Assistant is fully integrated with The Writer's Assistant word processing program and is suitable for customer files, mailing lists, inventory lists, etc.

- Create the format of your own data base file.
- Add, delete, modify, and copy records.
- Search any field wanted.
- Print reports in your own format.
- Scroll forward or backward through the records.

We wish to feature the Business Input Section each month and would welcome any 'Input' from you, the reader.

## Home or Business . . .



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## Glamuzinas

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# ERIC'S INPUT

## HOW TO BUY A HOME COMPUTER

When you don't know a thing about them.

First of all, thank you for your letters and words of encouragement. I wasn't sure whether my first article was too 'BASIC', but it gave help to would be buyers and that is the main thing. Some similar articles start out by comparing many makes of computer with their competitors and then sometimes drawing conclusions.

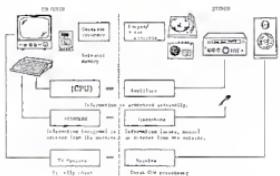
My intention is to familiarize you, the reader, with enough knowledge so that you can draw your own conclusions.

I read this comparison between a Computer and a Stereo System in the Sega SC-3000 manual and I think it is worth re-printing in this column.

The computer has now reached an era in which anyone can handle it with ease.

What is a computer then? Even if you understand languages, some people may not know just what computers do.

Let's compare computers to stereos.



The above figure shows the computer mechanism. When information (program) is entered from the outside results are displayed on the TV screen.

In the very simplest of terms, a computer is a storer of information. This information can then be played back in any sequence or order that the operator requires.

A computer can only play back things which have been 'fed' or 'programmed' into it. It cannot think for itself. At all times, it is under the control of the person operating it. Never the other way around!

It is possible to buy literally thousands of programs which have been already prepared, for use in all types of computers. Programs can take weeks, or even months to devise and all this knowledge can be available to you with a personal home computer.

Programmes can be used to make the computer play games; they can help you budget your housekeeping expenses, they can keep tabs on a special diet; they can act as a diary, as letterwriters. Computers can work out complicated mathematical problems in fractions of a second, check spelling, work out stresses and strains for engineering purposes.

Computers will eventually contain most of the sum total of mankind's knowledge — and this knowledge will be available to everyone who owns or uses a computer.

To make a computer work, you have to 'speak' to it. This is done in the computer's own language. The most common language is called BASIC.

Instead of issuing your commands with long and time-taking instructions, you get to learn a virtually shorthand set of words which activate the required reaction from the computer.

Please continue to write and I will answer your questions in this column each month.

Thank you for your letter. At the time of publication I was only able to answer some of your questions.

2. The extra 8 colours are programmed in from the keyboard.
3. A built-in cassette interface enables you to save program or data onto a cassette tape, and to re-load it at any time you want. This interface transfers programs and data at a rate of about 1200 bit/second. This rate is set so that programs in tape can be transferred between PAL and NTSC systems. However, you can program a HIGHER RATE simply by POKing data into three locations!

	NTSC	PAL
17168	76	70
17169	81	75
17170	113	105

To increase the cassette rate simply POK smaller values into the three locations.

6. I spoke to K'Rd Video & Computer Co. who informed me that they now had more than 85 games available.
7. These units are on the way. Yes, with Centronics parallel interface a GP-250X Seikosha can be used.

I'll need time to research the missing answers and I will also print next month the additions to the Colour Genie manual.

ERIC

Dear Eric,

A good review on the Colour Genie. However, how about a follow up along the lines of a bit of clarification on a number of points.

1. How do you get the auto return on the programmable keys?
2. Where do the extra 8 colours come from? I can only get 8.
3. Where in the memory can one poke the new values to alter the hand rate of data transfer?
4. What is "Software RS232"?
5. How do you overcome the lack of "SET/RESET" when using a TRS80 program?
6. 85 programs were mentioned as being available — where from?
7. There was nothing on the disc or the D.O.W. or, come to that, the printer. Can an Epson be interfaced? Can you use any disc system or only the manufacturers?

There is surely room for another computer magazine in NZ.

What it boils down to is — you support my machine and I'll support your magazine. There have been a lot of Colour Genies sold in NZ but very little information for the owners.

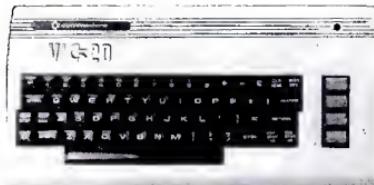
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I look forward to hearing from you soon.

Regards  
ERIC

E. MacAlpine  
TE AWAMUTU

**VIC 20  
\$495**



Features include: \* 5K RAM expandable up to 29K \* 8 border colours, 16 screen colours \* 8 screen character colours \* 3 audible tone generators, each of 3 octaves \* a 'white noise' generator \* 88 character program line length \* 64 ASCII character set \* full PET-type graphics character set generated directly from keyboard \* 176 x 158 pixels (27,808 in total) maximum resolution \* 8 programmable special functions accessed via 4 special function keys.



**COMMODORE 64 \$995**

Features include: \* 64K built in RAM \* 40 column colour display - tv interface \* Upper and lower case characters and graphics \* Sprite graphics on eight levels \* Music

synthesiser with three voices and nine octave range \* 16 colours available simultaneously \* 8 bit parallel user port.

**PRINTER \$795**

The VIC Printer — suitable for the Commodore 64 also — will print programs, letters, business data and graphics. It offers high specifications at a competitive price.

Price includes all cables.

Features include: 80 characters per line. Tractor feed dot matrix 30 characters per second print speed. Full alphanumerics and graphic printing. Double-size character capability.



**DISK UNIT 1541**

For the VIC-20 and the Commodore 64. A disk unit transforms your computer into a high-speed system ideal for the more serious pro-

grammer or small businessman. It enables you to get the best out of your utility programs.

**\$995**



Features include: 170K bytes capacity. Uses soft-sectored standard 5 1/4" single density floppy disks. Direct interface to computer. Direct compatibility with Printer.

Price includes all cables.

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#### **EASTERN DISTRICTS:**

**ASHFORD TELEVISION**

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#### **MEMORY PACKS FOR THE VIC-20**

Special plug-in cartridges are available to expand VIC's memory. 3K, 8K and 16K RAM packs plug directly into computer.

16K RAM Memory Pack **\$158.50**  
8K RAM Memory Pack **\$108.50**  
3K RAM Memory Pack **\$79.50**

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**SOFTWARE**

**CHESS 1-4 (ZX81) \$29.95.** Now play up to 10 different levels of chess on your ZX81! castling and En Passant captures all included. Plus printer output for either permanent record of all moves or copy of graphics board. **INVADERS (ZX81) \$24.95.** The old favourite space invaders — what else can we say but go get 'em!

**ADVENTURE TAPE 1 — 3 Full Adventures for the 16K ZX81 \$29.95.** Greedy Gulch — Discover the lost treasure mines in a deserted town. Pharaoh's Tomb — try to discover the long-dead Pharaoh's treasures.

Magic Mountain — Recover the ancient Scrolls of Wisdom.

**NOWATNIK PUZZLE AND OTHER DIVERSIONS \$29.95.** For either the ZX81 or 16K Spectrum. This is a program ideally suited to the T.V. display. A mind boggling challenge for puzzle enthusiasts, millions of different permutations.

## SPECTRUM SOFTWARE

**MAZEMAN (Spectrum 16K + 48K) \$29.95.** Use your skill to collect as many squares as you can but beware the hungry Hobgoblins. They chase relentlessly and you have only three lives. Grasp the magic Abersword and you have approx 10 seconds to counter attack and earn bonus points. Can you do it?

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## BBC SOFTWARE

**CASSETTE 1 — STAR TREK** A superb version with 8 x 8 Galaxy Klingons, Phasers, Torpedoes, etc. — CANDY FLOSS. A tremendous new game in which you run a candy floss stall on Blackpool's Golden Mile. But watch the weather and the donkeys! Only \$34.95 **MODEL A MOOEL B**

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**CASSETTE 13 — HYPERORIVE —** A new, very addictive machine code arcade game. Guide your laser tanks around the network of passages destroying the drone Aliens — but beware, evil OTTO lies in wait! Only \$34.95 **FOR MOOEL B (or + 32K)**

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## VIC20 SOFTWARE

**SHARK ATTACK.** Can you avoid the sharks and the octopuses while you trail your atomic net? Very addictive game Requirements — 3K expansion. \$19.95

**MARTIAN RAIKER.** Fly across the enemy landscape, bombing as you go, but watch out for missiles! 3K expansion \$19.95

**VIXEL NO. 3.** 3 Programs on one tape. In WARP you fly a space craft down an ever-narrowing tunnel. FIFTEEN is a version of the classic puzzle (usually sold as a plastic toy). RAIL. Easy when there's only one train, but as you keep succeeding so the number of trains to be controlled keeps growing. Requirements — joystick for WARP & FIFTEEN — minimum of 3K memory expansion for RAIL.

**REBEL OEFENOEB.** The imperial forces have just invaded your base planet, the water world of Aakwa. They have brought with them their most awesome weapon, the imperial stalker. Requirements — 8K expansion, padles \$24.95

**ULTIMATE TANK.** The year is 1999. Earth is being overrun by mutant spiders and giant space eyes. Each battle zone is patrolled by 1 or 2 nuclear tanks. Their mission is to search out and destroy. Requirements — 8K expansion, joystick optional. \$24.95

**CHIMP CHASE.** The object of chimp chase is to guide a small yellow chimp through the zoo in order to open all the cages. Good colour and sound effects. Requirements — Unexpanded VIC, joystick optional. \$24.95

**COSMIC CRYSTALS.** As commander of a Cosmic Space Station it is your mission to defend a sector of the force field vault where the 'Cosmic Crystals' are kept. Requirements — Unexpanded VIC, paddles \$24.95

**BLASTERoids.** As the captain of a fleet of 3 space cruisers, your mission is to eliminate an asteroid field. Good colour and sound; 3 skill levels. Requirements — Unexpanded VIC, joystick optional. \$24.95

**CRIBBAGE.** The age-old card game for 2 players — sorry! I meant for one player and his computer! Requirements — 16K expansion. \$24.95

**MARTIAN RAIKER.** Similar to skramble. Your mission is to fly across the Martain landscape destroying their cities, but it's not easy! Enemy missiles and UFOs are out to get you. Your fuel range can be extended by hitting enemy fuel dumps. Requirements — Unexpanded VIC, joystick optional. \$19.95

**CITY BOMBER.** Flatten the buildings with bombs so that you can land your plane safely. Very addictive. Requirements — Unexpanded VIC. \$19.95

**MIS CHECKBOOK.** Keep track of your cashbook! results filed on tape. Running cheque balances, dates, search by criteria, analyses, etc. Requirements — Unexpanded VIC. \$19.95



**COMPUTER BOOKS****BITS, BYTES AND BUZZWORDS**

This new book educates business people in what they need to know before buying a computer.

Describes how computers and peripherals work in a general sense, then discusses that which is important to business people — what computers can do in a business environment, what software is and why it is significant to a business, what to look for in a business system and what all the terminology means to someone in the business world.

This is a slick reference for business people to find out what everyone is talking about.

\$19.95

**HOW TO BUILD A PROGRAM**

This is one time it is not impolite to look over someone's shoulder. A comprehensive guide which allows a beginner to watch an experienced programmer during the development of an entire project; from the original idea through the building of a relatively complex program all the way to the final polishing.

The first of its kind, the book includes all the errors and bugs which usually occur during a programming project and ends each chapter with a concise list of the major points of that chapter. Examples abound, and are shown in both Microsoft BASIC and Pascal.

\$43.95

**HOW TO USE THE TIMEX SINCLAIR COMPUTER**

Assumes new owners know nothing about computers in general or the Timex Sinclair specifically, and proceeds in a very comfortable way to explain what to expect and how to handle any problems encountered.

How to set the computer up, how to work it, and touches on how to program the computer in BASIC. A very practical guide.

\$59.95

by Rodnay Zaks 214pp., 100 illustr., 26.95

The correct way to handle and care for all elements of a computer system, including what to do when something doesn't work.

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# MAIL ORDER SOFTWARE FOR YOUR VIEWING PLEASURE

## Educational

**TURTLE GRAPHICS.** David Malmberg's Turtle Graphics which utilizes the full graphic features of the Commodore 64. Create colourful and artistic pictures while painlessly learning all the basics of programming. \$129.00. **RETRO BALL™** by Alick Dziabczenko is a computer enhanced simulation of Air Hockey, featuring all the excitement and challenge of the original. "Retro Ball" offers either a computer opponent or the option of a two-player game. Either opponent can be handicapped to increase the challenge. \$89.00

**6502/6510 PROFESSIONAL DEVELOPMENT SYSTEM.** A cassette based assembler package offering a one or two pass assembler that uses standard MOS mnemonics and operand formats. \$89.00

**HESMON 64™** is an adaptation of the popular HESMON cartridge for the Commodore 64. HESMON is a 6502/6510 machine language monitor, with a mini-assembler, that is indispensable for all assembly language programmers. \$89.00

**HESWRITER 64™** is a sophisticated time-saving word processor based upon the unique HESWRITER. Includes full screen editing, justification, centering, page headers and page numbering. Compatible with all Commodore printers or any IEEE compatible printer. \$95.00.

## Educational

**BENJI'S SPACE RESCUE™** Join America's favourite canine hero on a journey through the solar system on a search for kidnapped scientists. Discover the wonders of our solar system as you and Benji battle aliens and use your knowledge to rescue the scientists. \$89.00.

**MOON DUST \$89.50.** See Software Review, P. 20.

**TRASHMAN — Cartridge \$89.50.** Pacman type.

**SNAKE BYTE \$89.00.** A large apple eating snake at your control, with every apple it grows longer. Watch out for the plums!! A much better game that it sounds with different levels of skill.

**Title: Crush, Crumble & Chomp — Type: Diskette — Price: \$73.00.** When a program is accompanied by a 46 page booklet it's reasonable to assume that it's no ten minute wonder!

**Title: Neutral Zone — Type: Cassette — Supplier: Access Software — Price: \$79.00.** This game takes you to the outer edge of our galaxy. You are assigned to a perimeter gunnery pod to protect Alpha IV, a long-range early-warning station whose mission is to detect alien intruders. Engage the attack computer and prepare yourself to take on a squadron of homicidal, even suicidal, aliens.

Your survival and the future of earth will depend on your quick wits and split second reaction.

**PAKACUDA, APE CRAZE, CENTROPODS, ESCAPE, MCP.** See Software Review, P. 20. \$39.95.

**Title: Moondust — Type: Cartridge — Price: \$89.50.** And now for something completely different! A game that reduces stress! A real gem from Creative Software. Hauntingly beautiful visuals (it is suggested that you turn the colour controls on your TV right up) and totally original electronic music combine to produce a work of art. Indeed, in my mind the game is secondary to beauty! If you've ever wanted a showpiece of just what state-of-the-art computer graphics and sound are all about, then this is for you. Place a 'seed' with your spaceman and attempt to drag it to centre screen with your spacecraft. Totally non-aggressive. Four different game options. Joystick required.

**Title: 6502 Professional Development System — Type: Cassette — Price: \$72.00.** Hesbal & Hesedit in one package. Serious programmers read on! Hesbal is a one or two pass 6502/6510 assembler that uses standard MOS mnemonics and operand formats. It has several pseudo-opcodes and over 25 error messages. Full instructions included and use of printer is provided for.

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## BUSINESS SOFTWARE

See Business Review Page 10

PERSONAL FINANCE	\$125.00
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BUSICALC	\$99.00
VIZAWRITE	\$140.00
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DEBTORS	\$250.00
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357 Arcade, 357 Gt Nth Rd, Henderson

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(\*allows for free software offer)

# SOFTWARE REVIEW

Each month Computer Input will be presenting pages of reviews on Software.

All types of software will be reviewed in these pages, for home computers for sale in New Zealand.

Our 'Ratings Table' headings are:

● **VISUAL QUALITY:** This we base on the programs use of graphics, colour, special effects, and special features.

● **SOUND QUALITY:** Based on skillful sound effects, musical variation, and complexity of the notes used.

● **PROGRAM QUALITY:** Here we're looking to see how well written the program is, and how well it exploits computer capabilities.

● **DIFFICULTY:** Here we look at levels of skill required, degree of interest and time taken to complete the game or each stage.

● **OVERALL:** Is the price in keeping with the content supplied. As we will be inspecting programs of a wide price range we will rate each on value for money, interest and overall presentation.

*	Hopeless
**	Sub-standard
***	What we would expect
****	Very good
*****	Exceptional

The Commodore 64 home computer has been available in New Zealand for over 6 months now. This month we review some of the games software available.

It may look like we are biased towards the C64, not so. We review what we can get hold of. So all you distributors etc out there drop us a line if you have software or hardware you would like reviewed.

## APE CRAZE



**Title:** Ape Craze — **Type:** Cassette — **Supplier:** Microdata — **Price:** \$39.95. Ape Craze is a game of skill in which the player must attempt to defeat the giant ape. This is accomplished by jumping up — from platform to platform — on the first screen to the escape hatch at the upper right while avoiding the bombs being tossed down by the ape. Upon reaching the escape hatch you will be transported to the second screen, where you must climb the ladders from level to level and pull out the bananas that hold the structure together. When all the bananas are removed, the structure will collapse and the ape is destroyed. As you climb the second structure the ape will release "smart bombs" — these will track and attempt to blow you up!

**JUMPING:** This requires some skill and may take a little practice. To jump simply press the fire button — move right or left while in the air by moving the joystick. Jumping higher may be accomplished by moving the joystick up while pressing the fire button.

**CLIMBING:** Use the joystick, you may go up and down ladders, left or right on surfaces. Press the fire button to jump over gaps and bombs. To remove bananas simply pass over them without jumping.

**BOMBS:** Do not collide with or land on a bomb or you will be destroyed and the game is ended. You may jump over bombs.

**SCORING:** Your score is determined by how rapidly you are able to get all the way through a screen. Extra points may be earned on the first screen by collecting (landing on) the "jewels" which rest on some of the platforms. Destruction of the ape in the second screen will return you to the first screen — but things will be a little more difficult.

This one will keep you on your toes.

VQ	*	***	*
SQ	*	***	*
PQ	*	***	*
D	*	***	*
OQ	*	***	*

**Title:** Pakacuda — **Type:** Cassette — **Supplier:** Microdata — **Price:** \$39.95. Pakacuda is an arcade style game in which the object is to direct your Pakacuda fish throughout the maze on the screen, consuming as many of the four octopus chasing you. You are given three fish (chances), one at a time. Each time an octopus captures you, you lose one of your fish. If you clear the screen of

little fishes, it is refilled — and things move faster.

You may combat and conquer the octopus by eating an eel just prior to engaging them. The eel will give your pakacuda a temporary "charge" enabling it to consume the octopus. This charge lasts approximately 10 seconds — during which time your pakacuda will turn green. When your pakacuda begins to pulse a reddish colour it means the charge is just about exhausted.

Points are determined by the number of fishes, eels and octopus consumed. A current high score is also displayed.

Not a bad version on the theme of "Pacman". If a fan of this theme, you'll find it a challenging version.

VQ	*	***
SQ	*	***
PQ	*	***
D	*	***
OQ	*	***

## PAKACUDA



**Title:** Escape MCP — **Type:** Cassette — **Supplier:** Microdata — **Price:** \$39.95. You have been teleported to the insides of your computer. Try to race your way through as many electrical circuits as possible without being annihilated. But beware ... the MCP!

Escape MCP is an arcade-style game in which the object is to outrun the Main Control Program. In order to proceed through the ten different levels, you must first obtain the MCP PASS, which will enable you to go down the stairs to the next level. As you continue, you will find assorted gold bars. These are worth 1000 points each, but don't get annihilated in the process. Bonus (risk) points are awarded if the MCP gets close enough to touch you, but not destroy you. The MCP PASS is worth 150 points, and completing a

# SOFTWARE REVIEW

level awards 100 points for the first level, 200 for the second, etc. You are given three chances to make progress, but do not waste them!

This game requires the use of a joystick plugged into port 2.

Quite a hard maze game in the way that the MCP follows you around all over the place. Hint — don't stand still.

VQ	*	*	*
SQ	*	*	*
PQ	*	*	*
D	*	*	*
OQ	*	*	*

## ESCAPE MCP



## CENTROPODS



**Title:** Centropods — **Type:** Cassette — **Supplier:** Microdata — **Price:** \$39.95. Do you have the required concentration and skill necessary to survive in the hostile environment of another world? Centrons are attacking from above in streams. The spinning alien "buzzer" relentlessly tries to slash at your spacesuit while sticky glue pods are slowing your progress whenever you step on one. With hovering saucers and guided missiles thrown in, it becomes most difficult for one to survive very long on the surface of Centro. How long can you last — how many points can

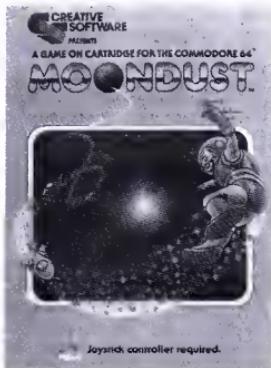
you accumulate before the succomb?

This game requires the use of a joystick plugged into joystick port 2. While your movement is limited to the bottom portion of the screen, you can move in all directions. Locate your player beneath a target and press the fire button to destroy an alien (and gain points). Direct contact with any alien being or device (other than a glue pods) will cost you one of your three chances for survival.

Points are awarded depending on how threatening (close) the alien is or, when shooting at a saucer, how far away it is when destroyed.

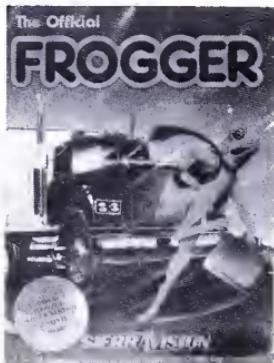
Very worth while. Mainly because I couldn't last longer than 2 minutes, but it keeps your interest up.

VQ	*	*	*
SQ	*	*	*
PQ	*	*	*
D	*	*	*
OQ	*	*	*



**Title:** Moondust — **Type:** Cartridge — **Price:** \$89.50. And now for something completely different! A game that reduces stress! A real gem from Creative Software. Hauntingly beautiful visuals (it is suggested that you turn the colour controls on your TV right up) and totally original electronic music combine to produce a work of art. Indeed, in my mind the game is secondary to beauty! If you've ever wanted a showpiece of just what state-of-the-art computer graphics and sound are all about, then this is for you. Place a 'seed' with your spaceman and attempt to drag it to centre screen with your spacecraft. Totally non-aggressive. Four different game options. Joystick required.

VQ	*	*	*	*
SQ	*	*	*	*
PQ	*	*	*	*
D	*	*	*	*
OQ	*	*	*	*



**Title:** Frogger — **Type:** Cassette — **Price:** \$84.50. An excellent version of the popular arcade game from Sierra-vision. This program makes great use of the extensive graphics and music capabilities of the 64. You must cross a busy 4 lane highway without getting squished by the cars and trucks that whizz by. Your problems aren't over when you reach the grass verge — if you stay there the grass snake will eventually get you. Next you must cross the river by jumping from log to log, climbing on the backs of turtles, taking care not to fall into the river and/or get caught by the alligators.

Frogger has been a popular game in the arcades and on home computers for some time — deservedly so, too; it's a pleasant change from zapping aliens — this version for the 64 is the best I've seen.

VQ	*	*	*
SQ	*	*	*
PQ	*	*	*
D	*	*	*
OQ	*	*	*

**Title:** Neutral Zone — **Type:** Cassette — **Supplier:** Access Software — **Price:** \$79.00. This game takes you to the outer edge of our Galaxy. You are assigned to a perimeter gunnery pod to protect Alpha IV, a long-range early-warning station whose mission is to detect alien intruders. Engage the attack computer and prepare yourself to take on a squadron of homicidal, even suicidal, aliens.

Your survival and the future of earth will depend on your quick wits and split second reaction.

It's a fast action arcade quality game written in machine language and features smooth scrolling of the 360 degree panorama. All action is in 3D high resolution with full colour graphics and fantastic sound effects.

With a two player option, and five levels of play (the first being for the very young) this game should keep the whole family going for hours of fun.

VQ	*	*	*	*	*
SQ	*	*	*	*	*
PQ	*	*	*	*	*

# SOFTWARE REVIEW

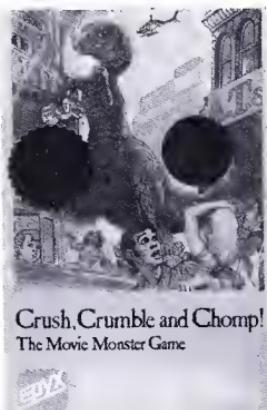
## NEUTRAL ZONE

By Bruce Devine



**NEUTRAL ZONE** "takes you to the outer edges of our assigned to a perimeter gunnery pod to protect Agent X's base, where his mission is to detect

**Title:** Crush, Crumble & Chomp — **Type:** Diskette — **Price:** \$73.00. When a program is accompanied by a 46 page booklet it's reasonable to assume that it's no ten minute wonder! Crush, Crumble & Chomp needs the 64 page booklet to explain how it all works. Not that the basics of the game are difficult to grasp — you are a movie monster (wide selection of what monster you'd like to be) and the aim is to kill, maim and destroy as much as possible — it's just that the game is so rich in choice and diversity that you need a guide to all the various options and what they entail. Once you've chosen your monster identity, you must decide what city deserves your evil intention; do you have a grudge against San Francisco? Gobble up the Golden Gate Bridge? Fed up with cheap imports? Eat Tokyo for lunch! Good sound and graphics. Months of enjoyment for any sadist!



**Crush, Crumble and Chomp!**  
The Movie Monster Game



VQ • • • •  
SQ • • • •  
PQ • • • •  
D • • • •  
OQ • • • •



**Title:** Jumpman — **Type:** Cassette — **Price:** \$89.00. This is the best program we've ever seen on cassette. The memory of the 64 is stretch to its limit with the fine all-machine code action game. It takes approximately 16 minutes to load but is definitely worth the wait. The game consists of moving your Jumpman around a skyscraper, up ladders and ropes, along ramps and girders, down ropes and elevators, defusing bombs. If you think that's simple then consider this: there are 3 different skill levels, thirty different game types, and 8 Jumpman speeds to choose from. Each game type is completely different — the basic principles remain the same, but the pattern of the skyscraper and the nature of the hazards encountered are completely different. Speeding bullets, marauding robots, floating blocks, alien spaceships, vampire bats, falling bombs, and quick draw gunmen are among the many hazards to be dealt with as you progress from level to level. Provision is made for recording names of the highest scorers and up to 4 players can play at once. This program is strongly recommended a good joystick is recommended and I suggest you set aside a few months of spare time if you're planning to master it.

VQ • • • • D • • • •  
SQ • • • • OQ • • • •  
PQ • • • •

**Title:** Retro Ball — **Type:** Cassette — **Price:** \$89.50. An accurate version of the popular air hockey game. Use your joystick to control either the hand stick or the puck. Test your skill either against the computer or a human opponent. Either opponent can be handicapped to equalise skill. A variety of options and degrees of difficulty.

VQ • • • •  
SQ • • • •  
PQ • • • •  
D • • • •  
OQ • • • •



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By Jay Mahrer

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## SOFTWARE REVIEW

### SEGA SC-3000 GAME CARTRIDGES

We had the opportunity whilst reviewing the Sega SC-3000 to appraise 6 Sega game cartridges. Unfortunately there are no prices at this time, but we're told they will be around \$40 each. This is only a brief to let you know of immediate availability.

#### SAFARI HUNTING

You are in a "vehicle" which you can move around the four sides of the screen. You can stop and get out at anytime, and walk around the maze in the middle of the screen, in which the occassional animal may scurry around. Your object is to shoot as many as you can (and not get chomped in the process). Quite an interesting game. Would keep the younger members of the family amused for hours.

PQ \* \* \* \*  
VQ \* \* \* \*  
SQ \* \* \* \*

fashion. As you lose ships, the survivors continue on through each level fighting off alien craft until you reach a new base star, or your fleet is destroyed. This game gave us a lot of enjoyment and should live up to fast arcade game lovers.

PQ \* \* \* \*  
D \* \* \* \*  
OQ \* \* \* \*

#### CONGO BONGO

Your goal is to climb, run or jump and capture the gorilla who is hampering you by rolling bombs down at you. Also you have to watch out for the pesky monkeys. A decent version of the "Kong" game. We found it hard to jump the ravine in the middle right of the screen. Again, this one would amuse the younger ones for hours (and a few older ones). PQ \* \* \* \*  
VQ \* \* \* \*  
SQ \* \* \* \*

#### YAMATO

You man an undersea gun firing upon enemy shipping and planes. Your gun moves left and right; you have two gunsights, one for ships and one for planes. Shoot 'em up, but watch out for the missiles from both ships & planes.

Quite a hard one, it gets a bit congested with all the enemy missiles about (some actually home in on you).

VQ \* \* \* \*  
SQ \* \* \* \*  
PQ \* \* \* \*

#### N-SUB

You are a commander of a sub — your mission to destroy all enemy shipping. Your job is made harder by the enemy subs which patrol the deep. A fast, multi-level game within. Well worth the outlay.

VQ \* \* \* \*  
SQ \* \* \* \*  
OQ \* \* \* \*

#### CHAMPION TENNIS

This one knocked us dead!

You play tennis against the computer or an opponent in almost real terms. The court and net (although multi-coloured) are very realistic, with you looking from one end of the court (almost a 3D effect). Two figures scurry around the court at your command, get your figure almost over the ball and the little guy will hit it. How close you are to the ball and the angle affects where the ball goes. All in all a very realistic game, and with a bit of practice you can get all the volleys, smashes and rallies of the pros.

The ball even casts a shadow on the court giving you some indication of height.

PQ \* \* \* \*  
VQ \* \* \* \*  
SQ \* \* \* \*

#### STAR JACKER

This is a good one, very worth while. It's hard to describe, but here goes — you start with 4 ships one in front of each other launched from a base ship. You can move over the whole playing area. Nasties fly down and around you as a 3D space corridor/landscape (whatever) moves past you. As you move left and right your ships move in a snake-like

# SOFTWARE INPUT

CHAT ZX-81 16K Peter McCarroll, Lower Hutt

This programme is displayed on the screen but can be altered so that it is printed out on the printer by changing all the 'PRINT' statements into 'LPRINT' statements.

Step by step instructions are displayed during the program.

All of the questions asked requires keyboard inputs.

```
10 CLS
15 PRINT "HI I AM PETE A ZX81
COMPUTER. WHAT'S YOUR NAME?"
20 INPUT N$
30 CLS
40 PRINT "HELLO THERE ";N$,"."
50 PRINT "ARE YOU ENJOYING YOURSELF HERE
""IN THE BIG CITY?"
60 INPUT E$
70 IF E$="NO" THEN GOTO 100
80 PRINT "I AM SORRY TO HEAR TH
AT ";N$,"."
90 FOR N=1 TO 150
100 NEXT N
110 GOTO 150
100 PRINT "I AM SORRY TO HEAR T
HAT ";N$,"."
110 PRINT "MAYBE I CAN BRIGHT
EN UP YOUR DAY"
120 FOR N=1 TO 150
130 NEXT N
140 CLS
150 PRINT "I CAN SOLVE LOTS OF
PROBLEMS", "WHICH PROBLEM DO YO
U HAVE?"
160 PRINT "HERLTH , MONEY O
R JOB ?"
170 INPUT P$
180 CLS
190 IF P$="HONEY" THEN GOTO 300
200 IF P$="JOB" THEN GOTO 400
210 PRINT TRB 12; "MY ADVICE TO
YOU IS: "
220 PRINT "TAKE THAT HSPR
INH"
230 PRINT "(2) DRINK LOTS OF
FLUIDS", "(NOT RLCOMOL)" 
240 PRINT "(3) GOTO BED", "(ALONE)"
250 PRINT AT 21,0; "PRESS NEU-LI
NE TO CONTINUE"
260 INPUT Z$
270 GOTO 500
300 PRINT "SORRY ";N$,". BUT IH
BROKE TOO"
310 PRINT "WHY NOT TRY SELLIN
G USED ", "COMPUTERS OR S
OMETHING"
320 GOTO 250
400 PRINT "I SYMPATHISE WITH YO
U ";N$,
410 PRINT "I HAVE TO WORK LONG
HOURS UNTIL ", "NO PAY. SOME PE
OPLES ARE VERY ", "ROUGH.UITH
MY KEYBOARD TOO"
420 PRINT "WHY NOT QUIT AND
GO ON THE DOLE", "GOOD HONEY T
HAT"
430 GOTO 250
```

```
500 CLS
510 PRINT "RAE THERE ANY MORE P
ROBLEMS", "CAN HELP YOU HIT
HIS IN$"
520 INPUT Q$
530 IF Q$="YES" THEN GOTO 150
540 CLS
550 PRINT "THAT WILL BE $5 FOR
HIS SERVICES.", "PLEASE LEAVE THE
HOME ON THE ", "DESK"
560 FOR N=1 TO 200
570 NEXT N
580 PRINT "...", "DIO YOU LEAVE TH
E HOME?", "INPUT M$"
590 IF M$="NO" THEN GOTO 700
610 CLS
620 PRINT "WHY YOU NO GOOD KEY'S
ORD FIBBER", "YOU LEFT ND HONE
Y RABBIT"
630 PRINT AT 21,0; "PRESS NEU-LI
NE TO CONTINUE"
640 INPUT A$
700 CLS
710 PRINT "HOU DO YOU EXPECT ME
TO EAT", "LIVING IF PEOPLE
ARE GOING TO", "HEAT ME?"
720 PRINT "OH UGLY I HUST N
OT TRKE IT f66, "LL "HARD"
730 PRINT ", "PRESS NEU-LINE TO
CONTINUE"
740 INPUT A$
750 CLS
760 PRINT "HAY I TALK TO SOMEON
E ELSE NOW ", "PLEASE"
770 PRINT AT 21,0; "PRESS NEU-LI
NE TO CONTINUE"
780 INPUT A$
790 RUN
```

MY RVICE TO YOU IS:

- (1) TRKE TUO RSPRIN
- (2) DRINK LOTS OF FLUIDS  
(NOT RLCOMOL)
- (3) GOTO BEO  
(ALONE)

I SYMPATHISE WITH YOU PETER  
I HAVE TO WORK LONG HOURS WITH  
NO PRY. SOME PEOPLE ARE VERY  
ROUGH. WITH MY KEYBOARD TOO

WHY NOT QUIT AND GO ON THE DOLE  
GOOD MONEY THAT....

SORRY PETER  
BUT IH BROKE TOO  
WHY NOT TRY SELLING USED  
COMPUTERS OR SOMETHING

\$10 is in the mail to you. ED.

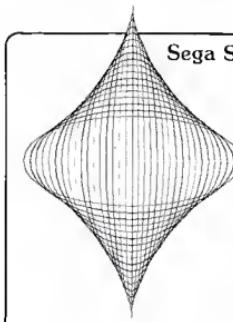
"SOFTWARE INPUT" file gives you the opportunity to have your programs, ideas or discoveries published. Please check that the programs are correct and please give a note explaining items such as graphics (the computer of course), the memory required and any part of the program which will be needed by fellow readers. We will pay \$10 for each contribution published.

# COMPUTER input.

# SOFTWARE INPUT

## PET Small Data Program

Sega SC-3000 Graphics Programme



VIC 20 Small Simulated Clock Program. Try it and see what you think.

```

10 PEM VIC CLOCK
20 PEM JOHN STEINBACH
25 PEM DOMINATED GRACIOUSLY
30 :
40 FOK=E36879,25:PRINT"VIC 20 Small Sine Wave Generator"
50 INPUT#1"TIME(HHMMSS) 0000000000000000":T$=TIME$;GOSUB500
55 GOSUB500
59 GOSUB1000
65 TIT=T#
70 D1=VAL(LLEFT(TIT#,1))
75 D2=VAL(MID(TIT#,2,1))
80 D3=VAL(MID(TIT#,3,1))
85 D4=VAL(MID(TIT#,4,1))
90 D5=VAL(MID(TIT#,5,1))
95 D6=VAL(MID(TIT#,6,1))
100 L1#=HIF(D1,1)+"+"+HIF(D2,1)+"+"+HIF(D3,1)
105 L2#=HIF(D1,2)+"+"+HIF(D2,2)+"+"+HIF(D3,2)
110 L3#=HIF(D1,3)+"+"+HIF(D2,3)+"+"+HIF(D3,3)
115 L4#=HIF(D1,4)+"+"+HIF(D2,4)+"+"+HIF(D3,4)

```

1000	NF(1,1)*" <sup>n</sup> "	1120	NF(4,2)*" <sup>n</sup> "	1270	NF(7,4)*" <sup>n</sup> "
1010	NF(1,2)*" <sup>n</sup> "	1140	NF(4,3)*" <sup>n</sup> "	1280	NF(8,1)*" <sup>n</sup> "
1020	NF(1,3)*" <sup>n</sup> "	1150	NF(4,4)*" <sup>n</sup> "	1290	NF(8,2)*" <sup>n</sup> "
1030	NF(1,4)*" <sup>n</sup> "	1160	NF(5,1)*" <sup>n</sup> "	1300	NF(8,3)*" <sup>n</sup> "
1040	NF(2,1)*" <sup>n</sup> "	1170	NF(5,2)*" <sup>n</sup> "	1310	NF(8,4)*" <sup>n</sup> "
1050	NF(2,2)*" <sup>n</sup> "	1180	NF(5,3)*" <sup>n</sup> "	1320	NF(9,1)*" <sup>n</sup> "
1060	NF(2,3)*" <sup>n</sup> "	1190	NF(5,4)*" <sup>n</sup> "	1330	NF(9,2)*" <sup>n</sup> "
1070	NF(2,4)*" <sup>n</sup> "	1200	NF(6,1)*" <sup>n</sup> "	1340	NF(9,3)*" <sup>n</sup> "
1080	NF(3,1)*" <sup>n</sup> "	1210	NF(6,2)*" <sup>n</sup> "	1350	NF(9,4)*" <sup>n</sup> "
1090	NF(3,2)*" <sup>n</sup> "	1220	NF(6,3)*" <sup>n</sup> "	1360	NF(0,1)*" <sup>n</sup> "
1100	NF(3,3)*" <sup>n</sup> "	1230	NF(6,4)*" <sup>n</sup> "	1370	NF(0,2)*" <sup>n</sup> "
1110	NF(3,4)*" <sup>n</sup> "	1240	NF(7,1)*" <sup>n</sup> "	1380	NF(0,3)*" <sup>n</sup> "
1120	NF(3,5)*" <sup>n</sup> "	1250	NF(7,2)*" <sup>n</sup> "	1390	NF(0,4)*" <sup>n</sup> "

VIC 20 Memory Reconfiguration Program

A addendum for those with limited VME 30 expansion

```

10 PRINT "THIS PROGRAM WILL"      100 DATA 24,144,3,108
12 PRINT "RE-CONFIGURE THE VIC"   110 DATA 252,255,162
14 PRINT "TO MINIMUM MEMORY."    120 DATA 255,260,154
16 PRINT "M1=M1+6162:ME=2*41613" 130 DATA 216,169,0
18 ME=15*6162:ME=2*41613       140 DATA 170,149,0
20 FOR I=0 TO 56                150 DATA 157,0,2,157
25 READ J:POKE M1,I:J:POKE M2,I,J:MENT 160 DATA 0,3,282,208
30 READ J:POKE M1,I:J:POKE M2,I,J:MENT 170 DATA 245,162,60
40 X=M2:IF PEEK(M1)=24 THEN X=M1:GOTO 65 180 DATA 160,3,134
45 IF PEEK(M2)=24 THEN 65        190 DATA 178,132,179
50 PRINT:PRINT:PRINT "SYSTEM IS ALREADY" 200 DATA 32,195,229
55 PRINT":PRINT" &MINIMUM" 210 DATA 169,16,141
60 GOTO 280 220 DATA 130,2,160
65 PRINT:PRINT 230 DATA 30,140,136
70 PRINT" TO RE-INITIALISE" 240 DATA 2,162,0,142
75 PRINT" EXPANDED SYSTEM" 250 DATA 131,2,140
80 PRINT" AFTER USE - ENTER":PRINT:PRINT 260 DATA 132,2,76,50
85 PRINT" &SYS\>+3:PRINT:PRINT" 270 DATA 253
90 PRINT:INPUT"PRESS RETURN":I 280 END
95 SYS X

```

## **SOFTWARE INPUT**

**C-64 Simulated Waterfall Program.** A good test of graphics. Lower-case type optional.

We're sorry if you find this program a bit small, but space limitations cause a "What you see is what you get" sort of scene. If you find it too difficult, please write including a stamped addressed envelope, and we will gladly return a full size copy. ED.

ED

# HOME COMPUTERS

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## SOFTWARE INPUT

### Easy Memory on the VIC-20

Here is a little programme which will reconfigure the VIC-20 for you to any memory size. This is ideal for running those unexpanded or 4K RAM games on say an 8K or 16K RAM fitted VIC.

Running the programme will reconfigure the VIC as if you had just switched on and will also erase the reconfiguration program itself, so make sure you save it on tape or disk before running.

Also be aware that if you try to set up a configuration which has RAM missing (i.e. to 24K with only 16K RAM expansion) the ram will do it, but you may be in trouble when it comes to doing anything with the VIC, especially when using strings.

```
10 PRINT "W"
20 PRINT "PRESS TO RECONFIGURE AS"
30 PRINT "1. 4K EXPANSION"
40 PRINT "2. EXISTING"
50 PRINT "3. UNEXPANDED"
60 PRINT "4. 8K EXPANSION"
70 PRINT "5. 16K EXPANSION"
80 PRINT "6. 24K EXPANSION"
90 PRINT "7. -24K EXPANSION"
100 GET T$1 IF T$1="1" OR T$1="2" THEN 100
110 C$=VAL(T$1) REM *** C IS THE CONFIGURATION NUMBER
120 GOSUB 10001 REM *** SET UP CONFIGURATION VARIABLES
130 PRINT "PRINT CONFIGURING AS A VIC"
140 PRINT "1. 4K EXPANSION"
150 PRINT "2. EXISTING"
155 PRINT "PRINT YOU WANT SUPER-*"
160 PRINT "EXPANDER IN OR OUT?*"
170 PRINT "PRESS 1 OR 0"
180 GET T$1 IF T$1="1" AND T$1="0" THEN 180
190 GOTO 2000 : REM *** DO THE RECONFIGURING
2000 REM *** SET UP POKE VALUES (X, Y, Z)
```

```
1010 REM *** AND SYS VALUE (Q)
1020 FOR I = 0 TO C1 REM *** READ THE APPROPRIATE VALUES
1030 READ X,Y,Z,T$1
1040 POKE I,X
1050 RETURN
1110 DATA 0,0,0,NO CHANGE
1111 DATA 16,38,38,3K EXPANSION
1120 DATA 4,38,38,3K EXPANSION
1130 DATA 18,84,16,8K EXPANSION
1140 DATA 18,95,16,16K EXPANSION
1150 DATA 19,128,16,24K EXPANSION
2000 REM *** DO THE CONFIGURATION
2010 REM *** IF T$1="1" SET UP TO INITIALISE VIA EXPANDER
2020 IF T$1="1" THEN Q=41231
2030 RCH *** IF Q=41231 THEN SET UP TO INITIALISE NORMALLY
2040 REM *** AND DISCONNECT EXPANDER
2050 IF T$1="0" THEN Q=40841/SYS264858
2100 IF C1=THEN 22001 REM *** DON'T SET NEW CONFIGURATION
2200 POKE 648,2
3210 POKE 643,01 POKE 644,Y
```

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# **SOFTWARE INPUT**

```

1 REM **** COMMODORE 64 PROGRAMMABLE FUNCTION KEYS
2 REM *** THIS PROGRAM WILL ENABLE YOU TO ASSIGN A VALUE OR A STRING
3 REM *** TO THE FUNCTION KEYS. TO USE - SIMPLY RUN. THE MESSAGE:-
4 REM *** USE SYS 49152 FOR ACCESS, WILL APPEAR ON THE SCREEN.
5 REM *** UPON EXECUTION THE PROMPTS FOR EACH OF THE FUNCTION KEYS WILL APPEAR
6 REM *** SIMPLY ENTER THE VALUE YOU WISH TO ASSIGN TO EACH OF THOSE KEYS
7 REM *** THEN PRESS THE <RETURN> KEY
8 REM *** IF NO VALUE IS REQUIRED FOR A PARTICULAR KEY JUST PRESS <RETURN>
9 REM *** THE LEFT ARROW KEY (<>) WHEN ENTERED AT THE END OF THE STRING
10 REM *** WILL CAUSE A CARRIAGE RETURN TO BE ENTERED AND SO WHENEVER THAT
11 REM *** FUNCTION KEY IS PRESSED, THE FUNCTION WILL BE AUTOMATICALLY EXECUTED
12 REM *** KEY VALUES CAN BE CHANGED AT ANY TIME BUT THERE IS A SET PROCEDURE:
13 REM *** PRESS RUN/STOP AND RESTORE KEYS. THIS WILL RESET THE SYSTEM POINTERS
14 REM *** THEN TYPE SYS 49152 AND THE CYCLE WILL BEGIN AGAIN
15 REM *** ASSIGNING THE NEW VALUES WILL NOT HARM OR DISTURB THE CURRENT PROGRAM
16 REM *** ON WHICH YOU ARE WORKING
17 REM *** IF YOU USE RUN/STOP AND RESTORE WHILE WORKING ON A PROGRAM
18 REM *** THE FUNCTION KEYS WILL STOP WORKING. TO RESTORE THEM WITHOUT
19 REM *** GOING THROUGH THE REPROGRAMMING CYCLE, USING THE DIRECT MODE TYPE:
20 REM *** POKE 788,144: POKE 789,192 ON THE SAME LINE THEN PRESS <RETURN>
21 REM *** THE FUNCTION KEYS WILL THEN BE AS YOU HAD THEM PREVIOUSLY PROGRAMMED
22 REM ***
23 REM ***
24 REM ***
25 REM ***
26 PRINT"J"
27 PRINT"*****PROCESSING FUNCTION KEYS":REM 10 DOWN 7 RIGHT
28 FOR X=49152 TO 49415
29 READ A:POKE X,A:NEXT X
30 PRINT"U"
31 PRINT"*****USE SYS 49152 FOR ACCESS":REM 11 DOWN 6 RIGHT
32 DATA 169,0,170,157,0,194,157,0
33 DATA 195,157,0,136,232,208,244,133
34 DATA 251,169,194,133,252,169,49,133
35 DATA 253,169,133,133,254,169,13,32
36 DATA 210,255,169,70,32,210,255,165
37 DATA 253,32,210,255,169,61,32,210
38 DATA 255,169,63,32,210,255,32,207
39 DATA 255,72,160,0,165,254,145,251
40 DATA 194,32,133,192,201,13,240,17
41 DATA 201,95,208,2,169,13,145,251
42 DATA 32,133,192,32,207,255,76,68
43 DATA 192,230,253,165,253,41,1,208
44 DATA 10,24,165,254,105,4,133,254
45 DATA 76,114,192,56,165,254,233,3
46 DATA 133,254,165,253,201,57,48,165
47 DATA 120,169,144,141,20,3,169,192
48 DATA 141,21,3,88,96,166,251,224
49 DATA 255,208,2,230,252,230,251,96
50 DATA 165,197,197,254,240,58,201,3
51 DATA 48,54,201,7,16,50,133,254
52 DATA 201,3,208,3,24,105,4,24
53 DATA 185,129,174,141,2,248,3,24
54 DATA 185,4,133,253,160,0,169,194
55 DATA 133,252,132,251,177,251,197,253
56 DATA 240,19,200,208,247,230,252,165
57 DATA 252,201,197,208,239,76,49,234
58 DATA 133,254,76,49,234,200,208,8
59 DATA 230,252,165,252,201,197,240,242
60 DATA 177,251,201,13,208,10,230,198
61 DATA 166,198,157,119,2,76,213,192
62 DATA 201,0,240,222,201,133,48,7
63 DATA 201,141,16,3,76,49,234,32
64 DATA 210,255,76,213,192,0,0,0

```

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Eric McCall teaches his son Gregory to type in the title of Computer Input magazine. Gregory, aged five, cannot read or write, but he can already type at a computer from a copy.

# PROGRAMMING BEFORE HE SCRAWLS

If anyone can be credited with inspiring the launch of New Zealand's first magazine dedicated purely to home computers, it is perhaps five-year-old Gregory McCall, of Bucklands Beach.

Gregory is the only one learning to write by hand and to understand what he reads. But already he is using his family's Commodore 64 computer.

"...in the future here today," said his father Eric, aged 30, who with his brother-in-law, Ashley Noble, runs Computer Input magazine, which has appeared on newsstands in the last few weeks.

"He can recognise letters and showed him how to use the space bar," he recalls of Gregory.

"Next thing I knew, I became hooked and he had typed a whole programme into the computer."

"What is it going to be like in 10 years' time?"

## Computer News

### Light-hearted

It was that question that spurred Mr McCall and Mr Noble into the decision to produce their new monthly magazine.

Mr Noble's father, Mr J. T. Noble, of Glenfield, is advertising manager.

"What we are providing is light-hearted fun, a general interest magazine written by the guys next door," said Mr McCall, who could find nothing pitched at the right age rating, that is, which ignored expensive business applications and concentrated on what most home computers are being used for.

In its slim 24 newspaper pages, Computer Input attempts to fill this gap with reviews of commercially available game cassettes

and the new Colour computer.

But the main feature, and the one Mr McCall believes makes it well worth \$1.50, is that it actually prints programs that readers can key into their own computers for nothing.

### Enthusiast

Prizes are offered for the best programmes submitted for publication by readers, and if any are good enough, Mr McCall plans to sell them on to software firms instead of publishing them.

He also offers to find answers to people's questions, and provides a mail-order service for popular programmes.

And if the initial response is anything to go by, Gregory McCall is not the only youngster who has been waiting for just such a magazine. From 5400 copies printed, more than 1000 subscriptions have already come back.

A 32-page November issue is due out late next week. New Zealand living abroad and from now on, even home game enthusiasts will follow their passion on glossy paper.

**"THE CO  
C  
M  
INDU**

NZ Herald  
Tues, Oct 11, 1983

Simon Collins  
Science & Computing Reporter

# COMPETITION PAGE

Our new competition, again the prize being a

## Sega SC-3000 Home Computer

this month will be only for new subscribers.



Complete the  
following sentence:

"COMPUTER INPUT MAGAZINE IS .....

(Note: Entries will be accepted with subscription)

The winner of the 100th subscriber competition will be announced next month. Many thanks for the response.

Should an alert reader spot a mistake in a program listing printed in COMPUTER INPUT (a mistake that will stop the program running as it should) and that reader be the first to tell us about it, then he or she will be \$10 richer. Simple.

Each month a "Program of the Month" will be chosen out of those received that month. This puts the author in the running for "Program of the Year". The overall prize for "Program of the Year" will be announced (but guaranteed to be worthwhile).

Each program will be judged on its content, i.e. graphics, sound, setting out, playing levels and so on. Obviously the computer it was produced on will be taken into account.

## BRAIN TEASER

To keep things simple for now, we will keep the theme of last month's Brain Teaser. Send us your programs covering the "Noughts and Crosses" theme and be in to win a software package for your computer. Let's see what you can do with this simple theme, and win some of those games that you can never seem to afford.

As usual the address is:

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MONTH

We review the COMX35 Home Computer, 35K RAM, 32K user available memory which is expandable to 64K in full colour plus 8 octaves of sound and has 16K BASIC ROM, distributed by Micro Mart Computers Ltd, Auckland.

We also will be reviewing the new 16 bit Texas Instruments Business/Home Computer which includes 16K RAM, 16 colour resolution graphics. Screen display is 32 characters by 24 lines TI — BASIC with a full size keyboard. For software we are told there are about 1000 programs to choose from. It's popular in the USA and is now being brought to NZ by Grandstand Leisure (NZ) Ltd.

Also a new range of overseas software.

# COMPUTER input

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